UPDATES TO THE FIELD INDICATORS OF HYDRIC SOILS IN THE MID-ATLANTIC UNITED STATES

Page 2: The second sentence in "CONCEPT" is changed to:

The activity of microorganisms causes the depletion of oxygen in saturated soils.

Page 5: The following references are added:

US Department of Agriculture, Natural Resources Conservation Service. 1998. Field book for describing and sampling soils. Compiled by P.J. Schoeneberger, D.A. Wysocki, E.C. Benham, and W.D. Broderson. National Soil Survey Center, Lincoln, NE.

US Department of Agriculture, Soil Survey Staff, 1999. Soil Taxonomy: A basic system of soil classification for making and interpreting soil surveys. USDA Agricultural Handbook 436. US Govt. Printing Off., Washington, DC.

Page 10: The definition for A2 Histic Epipedon should read as:

For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A histic epipedon.

The definition for A3 Black Histic should read as:

For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer of peat, mucky peat or muck 20 cm (8 in.) Or more thick starting within the upper 15 cm (6 in.) Of the soil surface having hue 10YR or yellower, value of 3 or less, and chroma of 1 or less.

The definition for A5 Stratified Layers should read as:

For use in LRRs F, K, L, M, N, O, P, R, S, T and U; for testing in LRRs V and Z. Several stratified layers starting within the upper 15 cm (6 in.) Of the soil surface. One or more layers has value 3 or less with chroma 1 or less and/or it is muck, mucky peat or mucky modified mineral texture. The remaining layers have value 4 or more and chroma 2 or less.

Page 11: In F1 Loamy Mucky Mineral, change the first sentence to:

For use in all LRRs except N, R, S, V, W, X, Y, and those using A7, and MLRA 1 of LRR A.

Page 12: The definition of F3 Depleted Matrix should read as:

For use in all LRRs except W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 25 cm (10 in.) of

the surface. The minimum thickness requirement is 5 cm (2 in.) if the depleted matrix is entirely within the upper 15 cm (6 in.) of the mineral soil.

The definition of F4 Depleted Below Dark Surface should read as follows:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 30 cm (12 in.) of the surface. The layers above the depleted matrix have value 3 or less and chroma 2 or less. The minimum thickness requirement of the depleted matrix is 5 cm (2 in.) if it consists of fragmental soil material (see glossary).

The definition of F5 Thick Dark Surface should read as follows:
For use in all LRRs except P, T, U, W, X and Y; for testing LRRs W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less (or a gleyed matrix) starting below 30 cm (12 in.) of the surface. The layers above the depleted or gleyed matrix have hue N and value 3 or less to a depth of 30 cm (12 in.) and value 3 or less and chroma 1 or less in the remainder of the epipedon.

In the definition of F6 Redox Dark Surface, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

In the definition of F6 Redox Dark Surface, **a.** should read:
a. matrix value 3 or less and chroma 1 or hue of N and 2% or more distinct or prominent redox concentrations as soft masses or pore linings, or

Page 13: The definition of F7 Depleted Dark Surface should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. Redox depletions with value 5 or more and chroma 2 or less, in a layer 10 cm (4 in.) thick entirely within the upper 30 cm (12 in.) of mineral soil that has:
a. matrix value 3 or less and chroma 1 or less and 10% or more redox depletions, or
b. matrix value 3 or less and chroma 2 or less and 20% or more redox depletions.

In the definition of F8 Redox Depressions, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

In the definition of F12 Iron/Manganese Masses, the first sentence should read:
For use in all LRRs except N, O, P and T; for testing in LRR M.

Page 14: The third sentence in the F12 Iron/Manganese Masses User Note is changed to:
Iron/manganese masses should not be confused with the larger and redder iron nodules (Soil Survey Staff, 1993a) associated with plinthitic soils or with concretions that have sharp boundaries.

In the definition of S1 Sandy Mucky Mineral, the first sentence should read:

For use in all LRRs except W, X and Y and those using A7.

In the definition of S5 Sandy Redox, the second sentence should read:
A layer starting within 15 cm (6 in.) of the soil surface that is at least 10 cm (4 in.) thick, and has a matrix with 60% or more chroma 2 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

Page 15: In the definition of S7 Dark Surface, the middle three sentences should read:
A layer of 10 cm (4 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with a matrix value 3 or less and chroma 1 or less. At least 70% of the visible soil particles must be covered, coated or similarly masked with organic material.

In the definition of TF2 Red Parent Material, the last three sentences should read:
In parent material with hue 7.5YR or redder, a layer at least 10 cm (4 in.) thick with a matrix value 4 or less and chroma 4 or less and 2% or more redox depletions and/or redox concentrations as soft masses and/or pore linings. The layer is entirely within 30 cm (12 in.) of the soil surface. The minimum thickness requirement is 5 cm (2 in.) if the layer is in the mineral surface layer.

Page 16: The definition of TF7 Think Dark Surface 2/1 should read as follows:
For testing in all LRRs except O, P, T, U and Z. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less (or a gleyed matrix) starting below 30 cm (12 in.) of the soil surface. The layer(s) above the depleted or gleyed matrix have hue 10YR or yellower, value 2.5 or less and chroma of 1 or less to a depth of 30 cm (12 in.) and value 3 or less and chroma 1 or less in the remainder of the epipedon.

Page 17: The definition for A2 Histic Epipedon should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A histic epipedon.

The definition for A3 Black Histic should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer of peat, mucky peat or muck 20 cm (8 in.) Or more thick starting within the upper 15 cm (6 in.) Of the soil surface having hue 10YR or yellower, value of 3 or less, and chroma of 1 or less.

The definition for A5 Stratified Layers should read as:
For use in LRRs F, K, L, M, N, O, P, R, S, T and U; for testing in LRRS and Z. Several stratified layers starting within the upper 15 cm (6 in.) Of the soil surface. One or more layers has value 3 or less with chroma 1 or less and/or it is muck, mucky peat or mucky modified mineral texture. The remaining layers have value 4 or more and chroma 2 or less.

Page 18: In the definition of A6 Organic Bodies, the first sentences should read:
For use in LRRs P, T, U and Z.

The fifth sentence of A6 Organic Bodies User Notes should read as follows:
Muck or mucky mineral as organic bodies within hemic (mucky peat) and/or fibric (peat) soil materials do not qualify as this indicator.

The definition of A7 5 cm Mucky Mineral should read:
For use in LRRs P, T, U and Z. A mucky modified mineral surface layer 5 cm (2 in.) or more thick starting within 15 cm (6 in.) of the soil surface.

The definition of A9 1 cm Muck should read:
For use in LRRs D, F, G, H, P and T; for testing in I, J and O. A layer of muck 1 cm (0.5 in.) or more thick with value 3 or less and chroma 1 or less starting within 15 cm (6 in.) of the soil surface.

Page 19: The definition of F3 Depleted Matrix should read as:
For use in all LRRs except W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 25 cm (10 in.) of the surface. The minimum thickness requirement is 5 cm (2 in.) if the depleted matrix is entirely within the upper 15 cm (6 in.) of the mineral soil.

In the definition of F8 Redox Depressions, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

In the definition of F12 Iron/Manganese Masses, the first sentence should read:
For use in all LRRs except N, O, P and T; for testing in LRR M.

Page 20: The third sentence in the F12 Iron/Manganese Masses User Note is changed to:
Iron/manganese masses should not be confused with the larger and redder iron nodules (Soil Survey Staff, 1993a) associated with plinthitic soils or with concretions that have sharp boundaries.

In the definition of F13 Umbric Surface, the second sentence should read:
In depressions and other concave landforms, a layer 15 cm (6 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with value 3 or less and chroma 1 or less immediately underlain by a layer 10 cm (4 in.) of more thick with chroma 2 or less.

In the definition of S5 Sandy Redox, the second sentence should read:
A layer starting within 15 cm (6 in.) of the soil surface that is at least 10 cm (4 in.) thick, and has a matrix with 60% or more chroma 2 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

Page 21: In the definition of S7 Dark Surface, the middle three sentences should read:
A layer of 10 cm (4 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with a matrix value 3 or less and chroma 1 or less. At least 70% of the visible soil particles must be covered, coated or similarly masked with organic material.

Page 22: The definition for A2 Histic Epipedon should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A histic epipedon.

The definition for A3 Black Histic should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer of peat, mucky peat or muck 20 cm (8 in.) Or more thick starting within the upper 15 cm (6 in.) Of the soil surface having hue 10YR or yellower, value of 3 or less, and chroma of 1 or less.

The definition for A5 Stratified Layers should read as:
For use in LRRs F, K, L, M, N, O, P, R, S, T and U; for testing in LRRS and Z. Several stratified layers starting within the upper 15 cm (6 in.) Of the soil surface. One or more layers has value 3 or less with chroma 1 or less and/or it is muck, mucky peat or mucky modified mineral texture. The remaining layers have value 4 or more and chroma 2 or less.

Page 23: In the definition of F1 Loamy Mucky Mineral, change the first sentence to:
For use in all LRRs except N, R, S, V, W, X, Y, and those using A7, and MLRA 1 of LRR A.

Page 24: The definition of F3 Depleted Matrix should read as:
For use in all LRRs except W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 25 cm (10 in.) of the surface. The minimum thickness requirement is 5 cm (2 in.) if the depleted matrix is entirely within the upper 15 cm (6 in.) of the mineral soil.

The definition of F4 Depleted Below Dark Surface should read as follows:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 30 cm (12 in.) of the surface. The layers above the depleted matrix have value 3 or less and chroma 2 or less. The minimum thickness requirement of the depleted matrix is 5 cm (2 in.) if it consists of fragmental soil material (see glossary).

The definition of F5 Thick Dark Surface should read as:
For use in all LRRs except P, T, U, W, X and Y; for testing LRRs W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less (or a gleyed matrix) starting below 30 cm (12 in.) of the surface. The layers above the

depleted or gleyed matrix have hue N and value 3 or less to a depth of 30 cm (12 in.) and value 3 or less and chroma 1 or less in the remainder of the epipedon.

In the definition of F6 Redox Dark Surface, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

In the definition of F6 Redox Dark Surface, **a.** should read:
a. matrix value 3 or less and chroma 1 or hue of N and 2% or more distinct or prominent redox concentrations as soft masses or pore linings, or

Page 25: The definition of F7 Depleted Dark Surface should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. Redox depletions with value 5 or more and chroma 2 or less, in a layer 10 cm (4 in.) thick entirely within the upper 30 cm (12 in.) of mineral soil that has:
a. matrix value 3 or less and chroma 1 or less and 10% or more redox depletions, or
b. matrix value 3 or less and chroma 2 or less and 20% or more redox depletions.

In the definition of F8 Redox Depressions, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

In the definition of S1 Sandy Mucky Mineral, the first sentence should read:
For use in all LRRs except W, X and Y and those using A7.

Page 26: In the definition of S5 Sandy Redox, the second sentence should read:
A layer starting within 15 cm (6 in.) of the soil surface that is at least 10 cm (4 in.) thick, and has a matrix with 60% or more chroma 2 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

Page 27: In the definition of S7 Dark Surface, the middle three sentences should read:
A layer of 10 cm (4 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with a matrix value 3 or less and chroma 1 or less. At least 70% of the visible soil particles must be covered, coated or similarly masked with organic material.

The definition of S8 Polyvalue Below Surface should read as:
For use in LRRs R, S and T; for testing in LRRs K and L. A layer with value 3 or less and chroma 1 or less starting within 15 cm (6 in.) of the soil surface underlain by a layer(s) where translocated organic matter unevenly covers the soil material forming a diffuse splotchy pattern. At least 70% of the visible soil particles in the in the upper layer must be covered, coated or masked with organic material. Immediately below this layer, the organic coating occupies 5% or more of the soil volume and has value 3 or less and chroma 1 or less. The remainder of the soil volume has value 4 or more and chroma 1 or less.

The definition of S9 Thin Dark Surface should read as:
For use in LRRs R, S and T; for testing in LRRs K and L. A layer 5 cm (2 in.) or more thick within the upper 15 cm (6 in.) of the surface, with a value 3 or less and chroma 1 or less. At least 70% of the visible soil particles in this layer must be covered, coated or masked with organic material. This layer id underlain by a layer(s) with value 4 or less and chroma 1 or less to a depth of 30 cm (12 in.) or to the spodic horizon, whichever is less.

Page 28: The definition of TA2 Structureless Muck should read as:
For testing in MLRAs 141, 143, 144b, 145 and 146 of LLR R. Starting within 15 cm (6 in.) of the soils surface on concave positions or in depressions, layer of muck 2 cm (0.75 in.) or more thick that has no soil structure.

In the definition of TF2 Red Parent Material, the last three sentences should read:
In parent material with hue 7.5YR or redder, a layer at least 10 cm (4 in.) thick with a matrix value 4 or less and chroma 4 or less and 2% or more redox depletions and/or redox concentrations as soft masses and/or pore linings. The layer is entirely within 30 cm (12 in.) of the soil surface. The minimum thickness requirement is 5 cm (2 in.) if the layer is in the mineral surface layer.

The definition of TF7 Think Dark Surface 2/1 should read as:
For testing in all LRRs except O, P, T, U and Z. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less (or a gleyed matrix) starting below 30 cm (12 in.) of the soil surface. The layer(s) above the depleted or gleyed matrix have hue 10YR or yellower, value 2.5 or less and chroma of 1 or less to a depth of 30 cm (12 in.) and value 3 or less and chroma 1 or less in the remainder of the epipedon.

Page 29: The definition for A2 Histic Epipedon should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A histic epipedon.

The definition for A3 Black Histic should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer of peat, mucky peat or muck 20 cm (8 in.) Or more thick starting within the upper 15 cm (6 in.) Of the soil surface having hue 10YR or yellower, value of 3 or less, and chroma of 1 or less.

In F1 Loamy Mucky Mineral, change the first sentence to:
For use in all LRRs except N, R, S, V, W, X, Y, and those using A7, and MLRA 1 of LRR A.

Page 30: The definition of F3 Depleted Matrix should read as:
For use in all LRRs except W, X and Y. A layer at least 15 cm (6 in.) thick with a

depleted matrix that has 60% or more chroma 2 or less starting within 25 cm (10 in.) of the surface. The minimum thickness requirement is 5 cm (2 in.) if the depleted matrix is entirely within the upper 15 cm (6 in.) of the mineral soil.

The definition of F4 Depleted Below Dark Surface should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 30 cm (12 in.) of the surface. The layers above the depleted matrix have value 3 or less and chroma 2 or less. The minimum thickness requirement of the depleted matrix is 5 cm (2 in.) if it consists of fragmental soil material (see glossary).

The definition of F5 Thick Dark Surface should read as follows:
For use in all LRRs except P, T, U, W, X and Y; for testing LRRs W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less (or a gleyed matrix) starting below 30 cm (12 in.) of the surface. The layers above the depleted or gleyed matrix have hue N and value 3 or less to a depth of 30 cm (12 in.) and value 3 or less and chroma 1 or less in the remainder of the epipedon.

Page: 31: In the definition of F6 Redox Dark Surface, **a.** should read:
a. matrix value 3 or less and chroma 1 or hue of N and 2% or more distinct or prominent redox concentrations as soft masses or pore linings, or

The definition of F7 Depleted Dark Surface should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. Redox depletions with value 5 or more and chroma 2 or less, in a layer 10 cm (4 in.) thick entirely within the upper 30 cm (12 in.) of mineral soil that has:
a. matrix value 3 or less and chroma 1 or less and 10% or more redox depletions, or
b. matrix value 3 or less and chroma 2 or less and 20% or more redox depletions.

In the definition of F8 Redox Depressions, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

Page 32: In the definition of S1 Sandy Mucky Mineral, the first sentence should read:
For use in all LRRs except W, X and Y and those using A7.

In the definition of S5 Sandy Redox, the second sentence should read:
A layer starting within 15 cm (6 in.) of the soil surface that is at least 10 cm (4 in.) thick, and has a matrix with 60% or more chroma 2 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

Page 33: In the definition of S7 Dark Surface, the middle three sentences should read:
A layer of 10 cm (4 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with a matrix value 3 or less and chroma 1 or less. At least 70% of the visible

soil particles must be covered, coated or similarly masked with organic material.

The definition of S8 Polyvalue Below Surface should read as:
For use in LRRs R, S and T; for testing in LRRs K and L. A layer with value 3 or less and chroma 1 or less starting within 15 cm (6 in.) of the soil surface underlain by a layer(s) where translocated organic matter unevenly covers the soil material forming a diffuse splotchy pattern. At least 70% of the visible soil particles in the in the upper layer must be covered, coated or masked with organic material. Immediately below this layer, the organic coating occupies 5% or more of the soil volume and has value 3 or less and chroma 1 or less. The remainder of the soil volume has value 4 or more and chroma 1 or less.

Page 34: The definition of S9 Thin Dark Surface should read as:
For use in LRRs R, S and T; for testing in LRRs K and L. A layer 5 cm (2 in.) or more thick within the upper 15 cm (6 in.) of the surface, with a value 3 or less and chroma 1 or less. At least 70% of the visible soil particles in this layer must be covered, coated or masked with organic material. This layer id underlain by a layer(s) with value 4 or less and chroma 1 or less to a depth of 30 cm (12 in.) or to the spodic horizon, whichever is less.

In the definition of TF2 Red Parent Material, the last three sentences should read:
In parent material with hue 7.5YR or redder, a layer at least 10 cm (4 in.) thick with a matrix value 4 or less and chroma 4 or less and 2% or more redox depletions and/or redox concentrations as soft masses and/or pore linings. The layer is entirely within 30 cm (12 in.) of the soil surface. The minimum thickness requirement is 5 cm (2 in.) if the layer is in the mineral surface layer.

In the definition of TF4 Below Dark Surface, add to the following sentence:
A layer at least 15 cm (6 in.) thick with 60% or more hue 2.5 Y or yellower, value 4 or more, and chroma 1; or hue 5Y or yellower, value 4 or more, and chroma 2 or less starting within 30 cm (12 in.) of the soil surface.

Page 35: The definition for A2 Histic Epipedon should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A histic epipedon.

The definition for A3 Black Histic should read as:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y. A layer of peat, mucky peat or muck 20 cm (8 in.) Or more thick starting within the upper 15 cm (6 in.) Of the soil surface having hue 10YR or yellower, value of 3 or less, and chroma of 1 or less.

The definition for A5 Stratified Layers should read as:

For use in LRRs F, K, L, M, N, O, P, R, S, T and U; for testing in LRRS and Z. Several stratified layers starting within the upper 15 cm (6 in.) Of the soil surface. One or more layers has value 3 or less with chroma 1 or less and/or it is muck, mucky peat or mucky modified mineral texture. The remaining layers have value 4 or more and chroma 2 or less.

Page 36: In the definition of A6 Organic Bodies, the first sentence should read:
For use in LRRs P, T, U and Z.

The fifth sentence of A6 Organic Bodies User Notes should read as follows:
Muck or mucky mineral as organic bodies within hemic (mucky peat) and/or fibric (peat) soil materials do not qualify as this indicator.

The definition of A7 5 cm Mucky Mineral should read:
For use in LRRs P, T, U and Z. A mucky modified mineral surface layer 5 cm (2 in.) or more thick starting within 15 cm (6 in.) of the soil surface.

The definition of A9 1 cm Muck should read:
For use in LRRs D, F, G, H, P and T; for testing in I, J and O. A layer of muck 1 cm (0.5 in.) or more thick with value 3 or less and chroma 1 or less starting within 15 cm (6 in.) of the soil surface.

Page 37: The definition of F3 Depleted Matrix should read as:
For use in all LRRs except W, X and Y. A layer at least 15 cm (6 in.) thick with a depleted matrix that has 60% or more chroma 2 or less starting within 25 cm (10 in.) of the surface. The minimum thickness requirement is 5 cm (2 in.) if the depleted matrix is entirely within the upper 15 cm (6 in.) of the mineral soil.

In the definition of F8 Redox Depressions, the first sentence should read:
For use in all LRRs except W, X and Y; for testing in LRRs W, X and Y.

In the definition of F12 Iron/Manganese Masses, the first sentence should read:
For use in all LRRs except N, O, P and T; for testing in LRR M.

Page 38: The third sentence in the F12 Iron/Manganese Masses User Note is changed to:
Iron/manganese masses should not be confused with the larger and redder iron nodules (Soil Survey Staff, 1993a) associated with plinthitic soils or with concretions that have sharp boundaries.

In the definition of F13 Umbric Surface, the second sentence should read:
In depressions and other concave landforms, a layer 15 cm (6 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with value 3 or less and chroma 1 or less immediately underlain by a layer 10 cm (4 in.) of more thick with chroma 2 or less.

In the definition of S5 Sandy Redox, the second sentence should read:
A layer starting within 15 cm (6 in.) of the soil surface that is at least 10 cm (4 in.) thick, and has a matrix with 60% or more chroma 2 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

Page 39: In the definition of S7 Dark Surface, the middle three sentences should read:
A layer of 10 cm (4 in.) or more thick starting within the upper 15 cm (6 in.) of the soil surface with a matrix value 3 or less and chroma 1 or less. At least 70% of the visible soil particles must be covered, coated or similarly masked with organic material.

The definition of S8 Polyvalue Below Surface should read as:
For use in LRRs R, S and T; for testing in LRRs K and L. A layer with value 3 or less and chroma 1 or less starting within 15 cm (6 in.) of the soil surface underlain by a layer(s) where translocated organic matter unevenly covers the soil material forming a diffuse splotchy pattern. At least 70% of the visible soil particles in the in the upper layer must be covered, coated or masked with organic material. Immediately below this layer, the organic coating occupies 5% or more of the soil volume and has value 3 or less and chroma 1 or less. The remainder of the soil volume has value 4 or more and chroma 1 or less.

Page 40: The definition of S9 Thin Dark Surface should read as:
For use in LRRs R, S and T; for testing in LRRs K and L. A layer 5 cm (2 in.) or more thick within the upper 15 cm (6 in.) of the surface, with a value 3 or less and chroma 1 or less. At least 70% of the visible soil particles in this layer must be covered, coated or masked with organic material. This layer id underlain by a layer(s) with value 4 or less and chroma 1 or less to a depth of 30 cm (12 in.) or to the spodic horizon, whichever is less.

In the definition of TF2 Red Parent Material, the last three sentences should read:
In parent material with hue 7.5YR or redder, a layer at least 10 cm (4 in.) thick with a matrix value 4 or less and chroma 4 or less and 2% or more redox depletions and/or redox concentrations as soft masses and/or pore linings. The layer is entirely within 30 cm (12 in.) of the soil surface. The minimum thickness requirement is 5 cm (2 in.) if the layer is in the mineral surface layer.

Page 41: The term "*Abrupt Boundary" and its definition are deleted.

Page 42: The term "Diffuse Boundary" is redefined as follows:
Diffuse Boundary - Used to describe redoximorphic features that grade gradually from one color to another. The color grade is commonly more than 2 mm wide. Clear is used to describe boundary color gradations intermediate between sharp and diffuse.

Page 43: Add the following term and definition:

Fragmental Soil Material - Soil material that consists of 90% or more rock fragments. Less than 10% of the volume consists of particles 2 mm or smaller.

Page 48: Add the following term and definition:

Sharp Boundary - Used to describe redoximorphic features that grade sharply from one color to another. The color grade is commonly less than 0.1 mm wide and change is abrupt under a 10X hand lens.

Send comments to Wade Hurt at: **Wade_Hurt@gnv.ifas.ufl.edu**

The NTCHS met in St. Louis, Missouri in January 1999, in Indianapolis, Indiana in August 1999 and in Houston (Stafford), Texas in May 2000 to make the aforementioned changes and corrections.